



A SOCIAL WEBSITE FOR TEACHING AND LEARNING PURPOSE

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ABSTRACT

In this paper, we are going to discuss about the current scenario of E-learning ecosystems, their drawbacks, advantages, limitations. We are also going to put forward our view on what can be done to minimise this limitations and make E-learning a great place to learn and enjoy the fun of exploring and learning new academic disciplines.

KEYWORDS: OSN (open social networks).

I. Introduction

Now a days, internet has become the mostly used standard for communication, socialization and almost every work of a daily life. Internet has also made a space in education department by providing various courses and study material online which can be accessed by the student from anywhere any time. Everyday a new technology is invented in the world and many people want to learn it but due to lack of teaching resources in the neighbourhood places they can't get hands on with the technology. But, if the person or the organization which have developed this technology upload the learning resources online, interested people in all corners of the world can get hands on with the technology at same instance of time. So any person, with internet connectivity should not be kept away from learning new things due to absence of resources. E-learning or Online learning can also provide education in the undeveloped areas of the world. Other than this, there are many advantages of E-learning. First of all, main advantage is the cost. Whenever some tries to learn a new thing, the cost which he incurs for learning it from local resources is high when compared to online learning. The reason behind this is that, whenever any mentor publishes his course online, it becomes available to a mass public worldwide. Secondly, most universities in India do not provide students with enough opportunities to venture outside the course they have chosen, which hinders the students' learning [1]. But as internet has strengthened its root in almost every part of the world, E-learning can offer various career opportunities to students. E-learning can prove to be a useful addition for students interested in exploring and learning other academic fields. Many online sites have started providing online education and have done a great job in solving many problems that occur in E-learning ecosystem. But there are some problems that still prevails and restrict people from using E-learning as the primary or secondary learning source.

II. Problems in current E-learning Ecosystem

Whenever any idea is in its embryonic state, it has to face some real world difficulties before coming to implementation. Similarly, though E-learning is not in rudimentary state, it has some problems associated with it. Firstly, when we learn a new technology in an institute, we come in contact with various other people which increases his social capabilities. But when we take any course online, there are no classmates to interact with, which in case takes negative step in social count. The level of interaction which needs to take place for clearing of doubts is not possible in current E-learning scenario. Secondly, when any person takes a course, the certification is very important when he needs to showcase it to the outside world. Many organizations don't accept the certifications from online learning sites as there is no proper grading scheme and no universal recognition of the qualities. Thirdly, personality development is the quality which can't be implemented online. Due to this, E-learning can't replace the education which is provided in school and college, but it can be well adapted as secondary source of learning new things.

III. Our Proposal

The main problem in the current E-Learning context is the lack of interaction with other people which affects the level of understanding the concept. But this problem can be dealt by introduction of social networking in E-learning scenario which would help students to easily communicate with other students and mentors for clarification of their doubts. Social Networks are meant for communication and its introduction in the E-learning environment would greatly change the level of interaction between students and mentors. Social software which is often used in e-learning includes blogs, wikis, social networking sites, and social bookmarking sites [2].

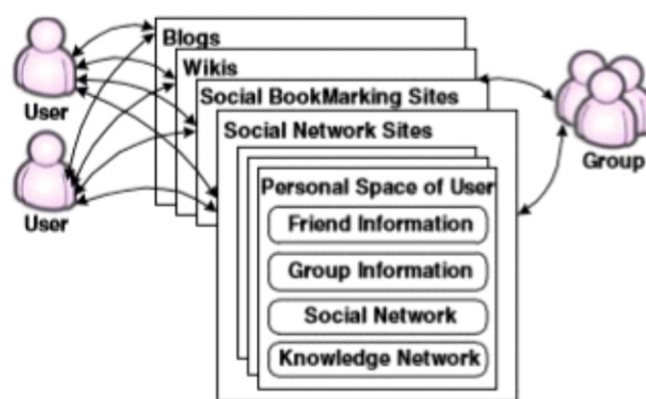


Fig 1: Interaction and Collaboration in social software [2]

When a person has to show off the skills he has learnt to the world, the best possible option is to showcase a project which the person has made with the help of the knowledge he got from the course. The project he worked on with the knowledge obtained from the course certifies that he has deeply learned the technologies and is ready to use them at an industrial standard.

IV. Recommendation based on cosine similarity

When a student signs up, his interests are stored which are then used for recommendation of various courses and classes. For this recommendation, cosine similarity can be used for the best possible recommendation. Cosine similarity works on the basis of vectors and their dot product.

Dot product for two vectors: $\vec{a} = (a_1, a_2, a_3, \dots)$ and $\vec{b} = (b_1, b_2, b_3, \dots)$,

where a_i and b_i are the components of the vector (features of the document, or TF-IDF values for each word of the document in our example) and n is the dimension of the vectors:

$$\vec{a} \cdot \vec{b} = \sum_{i=1}^n a_i b_i = a_1 b_1 + a_2 b_2 + \dots + a_n b_n$$

The geometric definition of dot product can be given as

$$\vec{a} \cdot \vec{b} = \|\vec{a}\| \|\vec{b}\| \cos \theta$$

The cosine similarity between two vectors (or two documents on the Vector Space) is a measure that calculates the cosine of the angle between them. This metric is a measurement of orientation and not magnitude, it can be seen as a comparison between documents on a normalized space because we're not taking into the consideration only the magnitude of each word count (tf-idf) of each document, but the angle between the documents. What we have to do to build the cosine similarity equation is to solve the equation of the dot product for the $\cos \theta$:

$$\vec{a} \cdot \vec{b} = \|\vec{a}\| \|\vec{b}\| \cos \theta$$

$$\cos \theta = \frac{\vec{a} \cdot \vec{b}}{\|\vec{a}\| \|\vec{b}\|}$$

V. Architecture

When we try to realise the E-learning and social media platform together, we can define it in layers. First layer consists of User interface layer which different for mentor and student. Mentor has various options like begin a course, upload a video, or answer a forum. Likewise student also have some unique applications for helping them learn new things and solve their queries.

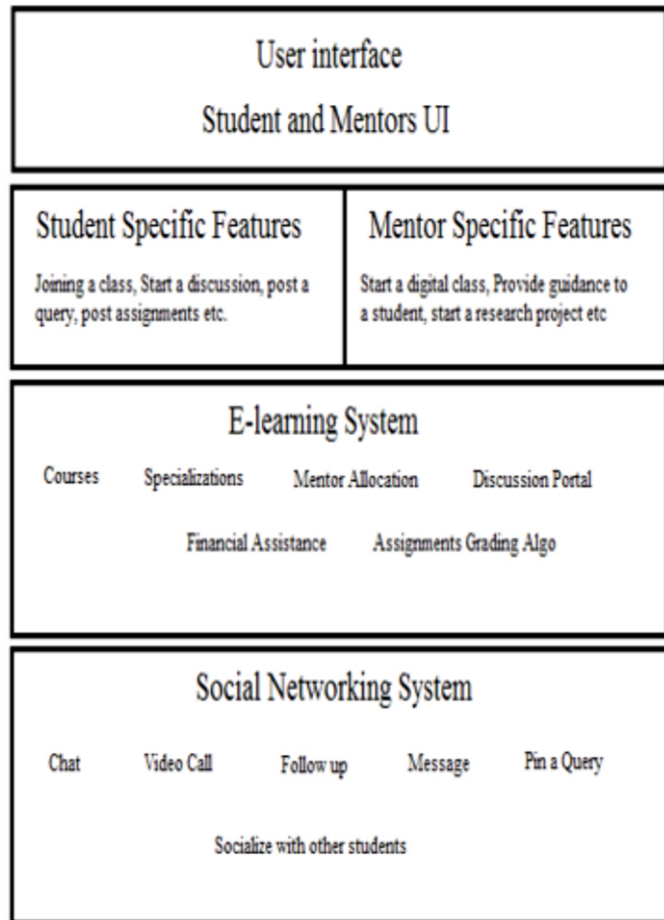


Fig 2: Architecture

VI. Conclusion and future scope

With the growing internet ecosystem and development of new technologies, E-learning can be a very effective measure in promoting the use and development of new technologies. And with the collaboration Social Network in it, interaction would further help in understanding the concepts and solving queries. With E-learning and social network, place would not be the parameter in Education due to the ubiquity of Internet network and the passion of learning.

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REFERENCES

1. <http://www.thehindu.com/features/education/the-coursera-advantage/article4985404.ece>
2. Zhao Du, Xiaolong Fu, Can Zhao, Qifeng Liu and Ting Liu, "Interactive and Collaborative E-Learning Platform with Integrated Social Software and Learning Management System", Springer-Verlag Berlin Heidelberg 2013